Amendments to the Claims

1. (Currently Amended): A method of video analysis comprising the steps of:

estimating a background reference frame for representing a background;

estimating geometric parameters for representing ~~a scale variation~~size changes of objects as the objects are moved at various depths in a given frame, the geometric parameters comprising a weighting for each pixel in the given frame;

obtaining a change detection map for distinguishing the background from the objects in the given frame; and

determining a measure of congestion of the given frame by combining the change detection map with the geometric parameters ~~to determine a measure of congestion of the given frame~~.

2. (Original): The method of claim 1, wherein the step of estimating the background reference frame further comprises:

initializing each region of the image with a single node and a local model;

evaluating confidence limits of the local model;

evaluating the local model to determine a multi-modality, wherein if a multi-modality is detected, further comprising:

splitting the local model into multiple nodes.

3. (Original): The method of claim 1, wherein said scale variation comprises variation in the object's width and height as a function of said object's position in the given frame.

4. (Original): The method of claim 1, further comprising the step of updating the background reference frame using the change detection map.

5. (Currently Amended): The method of claim 1, wherein the measure of congestion is a prolonged temporal event wherein a given percentage of a ~~subway~~ platform area is crowded with people for a ~~user-defined~~given period of time.

6. (Original): The method of claim 2, wherein each of said multiple nodes is assigned to a new state.

7. (Original): The method of claim 4, wherein static pixels of the background reference frame are updated.

8. (Currently Amended): A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for video analysis comprising the steps of:

estimating a background reference frame for representing a background;

estimating geometric weights for each pixel for representing a scale variation of objects in a given frame;

obtaining a change detection map for distinguishing the background from the objects in the given frame; and

determining a measure of congestion of the given frame by combining the change detection map with the geometric weights to determine a measure of congestion of the given frame, wherein the measure of congestion comprises a prolonged temporal event wherein a given percentage of the given frame is crowded with objects for a given period of time.

9. (Original): The program storage device of claim 8, wherein the step of estimating the background reference frame further comprises:

initializing each region of the image with a single node and a local model;

evaluating confidence limits of the local model;

evaluating the local model to determine a multi-modality, wherein if a multi-modality is detected, further comprising:

splitting the local model into multiple nodes.

10. (Original): The program storage device of claim 8, wherein said scale variation comprises variation in the object's width and height as a function of said object's position in the given frame.

11. (Original): The program storage device of claim 8, further comprising the step of updating the background reference frame using the change detection map.

12. (Original): The program storage device of claim 8, wherein the measure of congestion is a prolonged temporal event wherein a given percentage of a subway platform is crowded for a user-defined period of time.

13. (Original): The program storage device of claim 9, wherein each of said multiple nodes is assigned to a new state.

14. (Original): The program storage device of claim 11, wherein static pixels of the background reference frame are updated.

15. (New): A method of video analysis comprising the steps of:

estimating a background reference frame representing a platform area;

estimating geometric parameters for representing size changes of people as the people move at various depths on the platform area in a given frame, the geometric parameters comprising a weighting for each pixel of the people in the given frame;

obtaining a change detection map for distinguishing the platform area from the people in the given frame; and

determining a measure of congestion of the platform area by combining the change detection map with the geometric parameters, wherein the measure of congestion comprises a prolonged temporal event wherein a given percentage of the platform area is crowded with the people for a given period of time.